UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,564	11/15/2001	Anthony Corry Sasse	P070361US00	8345

881 7590 10/22/2003

LARSON & TAYLOR, PLC
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA, VA 22314

EXAMINER	
ASTORINO, MICHAEL C	
ART UNIT	**PAPER NUMBER**
3736	7

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/914,564	Applicant(s) SASSE ET AL.	
	Examiner Michael Astorino	Art Unit 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 November 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claims 1, 3, 4, and 5 are objected to because of the following informalities:

claim 1 – a claim is supposed to be one sentence, the examiner suggests removing the first period from the claim; claims 3 and 4 – please amend "claim I" to "claim 1"; and claim 5 – a claim is supposed to be one sentence, the examiner suggests removing the first period from the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 18, 19, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Dempsey et al US Patent Number 6,132,371.

Claim 1. Apparatus for physiological monitoring of a remote subject including:

a base station having a transmission means for transmitting a reference signal (54); and

at least one physiological monitoring probe (20) connectable to said subject, said physiological monitoring probe or probes having:

receiver means for receiving said reference signal (58);

monitoring means for monitoring said subject and generating a condition signal containing information related to a condition or conditions of said subject (ECG electrodes);

modulation means for modulating said reference signal to produce a modulated reference signal containing said information contained in said condition signal (column 6, lines 13-40); and

passive retransmission means for passively retransmitting said modulated reference signal to said base station ("re-radiated", column 6, lines 13-40);

wherein said base station (54) has means for receiving (32, 24) said modulated reference signal, and means for demodulating (28) said modulated reference signal to obtain said information related to one or more conditions of said subject so that one or more conditions of said subject can be monitored at said base station, and wherein said physiological monitoring means includes intermediate signal mean for generating an intermediate signal, derived by combining said condition signal with a fixed or varying frequency signal before modulating said reference signal (column 3, lines 39-67, and column 4, lines 1-59).

Claim 2. Apparatus as claimed in claim 1, wherein said receiving means and passive retransmission means are a passive radio transponder, ("re-radiated RF signal", column 4, lines 13-34).

Claim 3. Apparatus as claimed in claim l, wherein said monitoring means includes a physical parameter transducer (45).

Claim 4. Apparatus as claimed in claim l, wherein said monitoring means includes a biological electrode (ECG electrodes; 44a and 44b).

Claim 5. Apparatus an claimed in claim 1, wherein said intermediate signal means is operable to convert analog and/or digital signals (50) from the monitoring means to an intermediate signal which is used to modulate a radio frequency signal received by a passive radio transponder, so that the transponder automatically retransmits a modulated signal which contains information relating to the condition of the subject, (column 6, lines 13-61).

Claim 6. Apparatus as claimed in claim 1, wherein said passive radio transponder may use a plurality of intermediate signals to modulate a radio frequency reference signal, (column 4, lines 13-29, and column 6, lines 13-61).

Claim 7. Apparatus as claimed in claim 1, wherein said base station includes analog and/or digital outputs for outputting data (50).

Claim 8. Apparatus as claimed in claim 1, wherein said base station is connectable to a computer network, and operable to receive input and output data-

via said computer network. It is inherent that a computer network exists when, "Alternatively, the signal may be processed so as to extract useful information and such information may be logged into a database at a central location", column 4, lines 48-51.

Claim 9. Apparatus as claimed in claim 1, including encryption means so that said apparatus can transmit and/or receive data in encrypted form. It is inherent that the apparatus taught in Dempsey "can" transmit and/or receive encrypted data.

Claim 10. Apparatus as claimed in claim 1, wherein said condition signal includes a synchronous or an asynchronous data signal (inherent via transmission).

Claim 11. Apparatus as claimed in claim 1, wherein said base station is operable to use either a fixed frequency reference signal or vary the frequency or phase of the reference signal by a continuously varying signal having an instantaneous value that determines the respective instantaneous frequency or phase (column 4, lines 13-59).

Claim 13. A method of physiological monitoring of remote subject including:

transmitting a reference signal from a base station (54) to at least one remote physiological monitoring probe (20) connected to a subject;

monitoring said subject and generating a condition signal containing information related to a condition or conditions of a said subject (ECG);

generating an intermediate signal derived by combining said condition signal with a fixed or varying frequency signal, (column 4, lines 13-29, and column 6, lines 13-61);

modulating said reference signal to produce a modulated reference signal containing said information contained in said condition signal,;

passively retransmitting said modulated reference signal from said biological monitoring probe to said base station, and

demodulating said modulated reference signal to obtain said information related to the condition or conditions of said subject so that the condition or conditions of said subject can be monitored at said base station, (column 4, lines 13-29, and column 6, lines 13-61).

Claim 14. A method as claimed in claim 13, wherein said fixed or varying frequency signal includes a plurality of sub-carrier signals, (column 6, lines 30-40).

Claim 15. A method as claimed in claim 13, further including converting analog and/or digital signals from a subject monitoring means to the intermediate signal which is then used to modulate a radio frequency signal received by a passive radio transponder, whereby the transponder automatically retransmits a modulated

signal containing information relating to the condition of the subject, (column 4, lines 13-29, and column 6, lines 13-61).

Claim 16. A method as claimed in claim 13, including transmitting data from said base station over a computer network, and/or inputting data over a computer network (column 4, lines 44-51).

Claim 18. A method as claimed in claim 13, including transmitting said condition signal as a synchronous or an asynchronous data signal, (inherent via transmission).

Claim 19. A method as claimed in claim 13, including fixing the frequency of the reference signal or varying the frequency or phase of the reference signal by a continuously varying signal having an instantaneous value that determines the respective instantaneous frequency or phase, (column 4, lines 13-29).

Claim 21. A method-as claimed in claim 13, wherein said method is used to monitor sleep apnoea. It is inherent that ECG is used to monitor sleep apnea.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dempsey et al US Patent Number 6,132,371 as applied to claims 13 above, and further in view of Schulze et al US Patent Number 6,443,890 B1.

Regarding claim 17, "A method as claimed in claim 13, including encrypting data to be output by said base station, and/or encrypting said modulated reference signal", Dempsey et al disclose that the data collected maybe sent to a nurse's station or a central location with a database but not encrypting the data. However, Schulze et al, a reference in an analogous art disclose encrypting data to while in route to a database (column 4, lines 55-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transmission of Dempsey et al data in view of the encryption method of Schulze et al, since Schulze et al states in column 4, lines 61-62, encrypting data limits access so that patient privacy and confidentiality is maintained.

6. Claims 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dempsey et al US Patent Number 6,132,371 as applied to claims 1/11 and 13/19 above, and further in view of Burrows US Patent Number 5,617,871.

Regarding claims 12 and 20, dependent on claims 11 and 20, respectively, the limitation, "in which the continuously varying signal is a Pseudo-Random Binary Sequence". Dempsey et al discloses a frequency modulation using a frequency shifting circuit, but does not specifically disclose using a Pseudo-Random Binary Sequence. However, Burrows a reference in an analogous art does disclose using a Pseudo-Random Binary Sequence with a frequency modulation, (see figure 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transmission of Dempsey in view of spread spectrum frequency modulation of Burrows, since Burrows states in column 2, lines 60-64, spread spectrum modulation reduces the likelihood of noise and interfernce.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Balkin et al. US Patent Number 6,419,629 B1 for transmitting physiological data via the Internet and using ECG for monitoring sleep apnea.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Astorino whose telephone number is 703-306-9067. The examiner can normally be reached on Monday-Thursday, 10:00AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (703) 308-3130. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5648.

Michael Astorino
October 13, 2003